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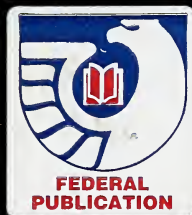
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# ARS Science Hall of Fame

*September 12, 2007*



Agricultural Research Service  
U.S. Department of Agriculture

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A special website is available that features photographs and biographies of all ARS Science Hall of Fame inductees since the inaugural year of 1986. Special features include browse and search functions and video clips from interviews with some members of the Hall of Fame.

Please visit [www.ars.usda.gov/careers/hof/](http://www.ars.usda.gov/careers/hof/)

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# Agricultural Research Service SCIENCE HALL OF FAME

The ARS Science Hall of Fame was inaugurated in 1986. We determined that each succeeding year, one or more present or former scientists with the Agricultural Research Service could be selected, subject to the following criteria:

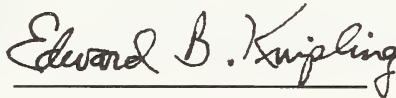
The selectee made widely recognized impact on agricultural research by the solution of a significant agricultural problem through research.

The selectee is a person whose scientific accomplishments and stature continue to affect the agricultural research community and/or influence the development of science-based agricultural policy.

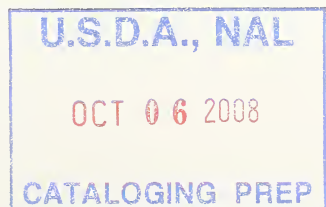
The selectee's character and record of achievement have brought major recognition and credibility to ARS and/or USDA, and are worthy of emulation by younger agricultural scientists.

The selectee's achievements must be or have been nationally and/or internationally recognized by peers in the scientific community.

Today we honor three outstanding scientists by inducting them into the Science Hall of Fame. A plaque citing the achievements of each will be on permanent display in the ARS National Visitor Center at the Beltsville Agricultural Research Center.



Edward B. Knipling  
Administrator





## SCIENCE HALL OF FAME

### **Johnie N. Jenkins**

Director

Crop Science Research Laboratory

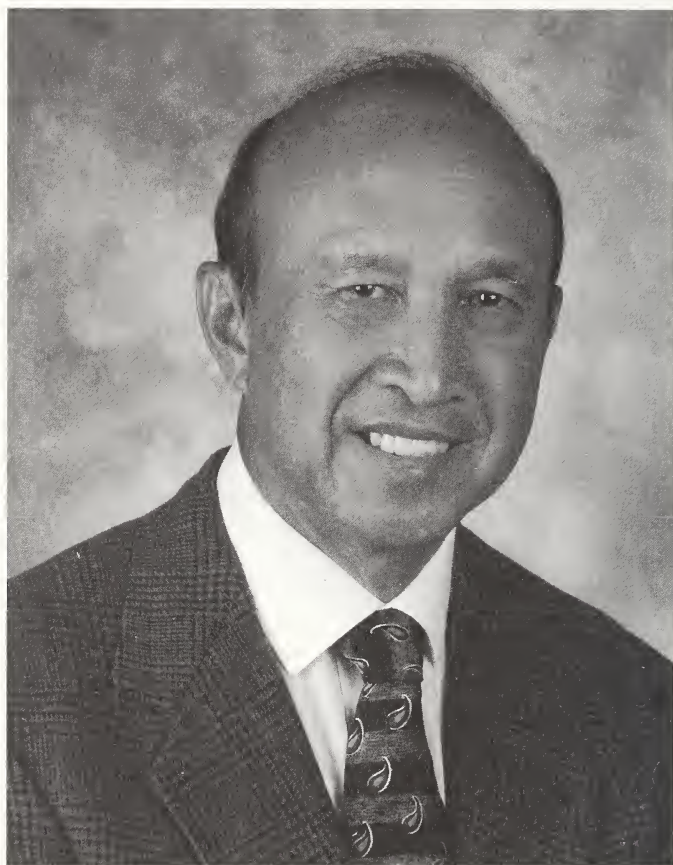
Mississippi State, Mississippi

*For pioneering leadership, vision, innovative cotton host plant resistance research and technologies, impact on science, and development and mentoring of young scientists.*

**J**ohnie Jenkins's realization of interdisciplinary teamwork on host plant resistance brought great advances in reduction of damage to cotton by insects and nematodes. For more than 45 years, he has sought improvement of cotton yields through improvement of germplasm.

Investigating differences in germplasm resistance to pests, he pioneered the understanding of the effects of chemical differences among cotton strains on the variability of damage done by pests. Cotton farmers can thank Jenkins for less damage by boll weevils, *Heliothis*, tarnished plant bugs, and root-knot nematodes. Jenkins also performed seminal work on cotton fruiting, retention, and yield, developing the technique of "plant mapping."

Jenkins received the Cotton Genetics Award, the Mobay Cotton Research Award, and the first international Verdant Partners Crop Genetics Award. He is a Fellow of the Crop Science Society of America, the American Society of Agronomy, and the American Association for the Advancement of Science. USDA honored Jenkins with the Outstanding Scientist of the Year Award in 1992 and the Superior Service Award in 1996.





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SCIENCE HALL OF FAME

**Dennis Gonsalves**

Director

Pacific Basin Agricultural Research Center  
Hilo, Hawaii

*For pioneering research and leadership in plant pathology and biotechnology  
to increase agricultural productivity and improve human health.*

**D**ennis Gonsalves was a trailblazer in applying pathogen-derived resistance to the development of virus-resistant plant varieties and in related research into viral diseases of fruits and vegetables. After years of studying and improving disease resistance in cucumber, grapevine, and other fruits and vegetables, Gonsalves and his team developed methods for transferring specific virus genes into host plants to create resistance to that virus.

His ringspot-resistant papaya saved the small-farm-based Hawaiian papaya industry. This new variety was so successful that it became the first commercialized transgenic fruit crop.

Gonsalves further adapted papaya varieties for local conditions in Africa and Bangladesh. These improved varieties will help in overcoming vitamin-A deficiency in children of those areas. He has also consulted with researchers in Europe, Southeast Asia, and China.

Gonsalves has been honored by the American Phytopathological Society, of which he is a Fellow, the American Society of Horticultural Science, the American Society of Plant Biologists, and the Alexander von Humboldt Foundation. USDA honored Gonsalves with the 2004 Technology Transfer Award and the 2003 B.Y. Morrison Memorial Lectureship.



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SCIENCE HALL OF FAME

**Janet C. King**

Director

Western Human Nutrition Research Center  
Davis, California

*For national and international leadership and research achievement  
in human nutrition.*

**J**anet King is internationally recognized for research on energy and zinc metabolism in adults, and especially in pregnant women. Her work has profoundly influenced understanding of maternal and infant health.

King showed in a groundbreaking study that maternal nutritional status, particularly fat stores, at the inception of pregnancy strongly affects the pregnancy's outcome. This led to the Institute of Medicine of the National Academies establishing differing weight-gain guidelines for underweight, normal-range, and overweight expectant mothers.

King chaired the 2005 Dietary Guidelines Advisory Committee for the U.S. Departments of Agriculture and Health and Human Services, which guided revision of the Dietary Guidelines for Americans and the Food Pyramid. She was also chair of the National Academy of Sciences' Food and Nutrition Board, which established a new paradigm for U.S. Dietary Reference Intakes, and a United Nations committee on international harmonization of dietary standards.

King has received awards from the American Academy of Pediatrics, the American Dietetic Association, the American Public Health Association, the American Society for Nutrition, and the Swiss Milk Association. She was named 2006 W.O. Atwater Memorial Lecturer by USDA. King is a member of the Institute of Medicine of the National Academies and a Fellow of the American Society for Nutrition.

# ARS SCIENCE HALL OF FAME

1986

**Edward F. Knipling**

*For pioneering research and leadership in development of the sterile insect technique, which led to the eradication of the screwworm, and of other technologies to suppress and manage insect pests.*

1987

**Howard L. Bachrach**

*For pioneering research on the molecular biology of foot-and-mouth disease that led to development of the world's first effective subunit vaccine for any disease of animals or humans through the use of gene splicing.*

**Myron K. Brakke**

*For consistent, career-long valuable contributions to the science of virology, particularly plant virology.*

**Glenn W. Burton**

*For outstanding achievements in forage and turf science, which have had extraordinary effects on the forage-based cattle industry, the turf industry, and agriculture worldwide.*

**Wilson A. Reeves**

*For outstanding research and leadership in the field of textile chemical finishing that have significantly benefited agriculture and consumers.*

**Earnest R. Sears**

*For pioneering work in wheat genetics and for discoveries on chromosomal mechanisms that established standards in animal, plant, and human genetics.*

**Orville A. Vogel**

*For development of the first useful semidwarf wheats and of innovative production systems that made the Pacific Northwest a major source of soft white wheat, inspired similar research efforts throughout the world, and sparked the Green Revolution.*

**Cecil H. Wadleigh**

*For elucidating the mechanisms through which crops respond to salinity and water stress and for inspired planning and leadership that enabled and motivated those who worked with him to expand and make use of knowledge of soils, water, and air and their interactions with plants.*

1988

**Francis E. Clark**

*For outstanding research leading to greater understanding of soil, plant, and microbial interactions and of nutrient cycling in terrestrial ecosystems.*

**Edgar E. Hartwig**

*For research in soybean breeding and genetics that has been a major factor in soybeans becoming the second most valuable U.S. crop and particularly for developing cultivars that thrive in the South.*

**Ralph E. Hodgson**

*For significant contributions to the knowledge of ruminant nutrition and for visionary leadership, both domestic and international, in the animal industries.*

**Hamish N. Munro**

*For career-long contributions to the science of nutrition, particularly on the relationship of dietary protein and iron to the health of the elderly, and for promotion of studies on aging.*

**Jose Vicent-Chandler**

*For research leading to new and greatly improved production systems for beef, milk, coffee, plantains, and rice for Puerto Rico and Caribbean countries.*

1989

**Douglas R. Dewey**

*For world leadership in genetics and taxonomy of the Triticeae tribe of grasses and for development of the cytogenetic basis for creating new grass hybrids.*

**Theodor O. Diener**

*For conceptualizing and discovering viroids, for leading research on viroid detection and control, and for inspiring new approaches in the search for causes of several serious diseases affecting plants, livestock, and humans.*

**Karl H. Norris**

*For developing principles and instruments using the electromagnetic wave spectrum to make rapid nondestructive measurements for evaluating quality of agricultural products.*

**John F. Sullivan**

*For engineering contributions to the food-processing and preservation industries, including development of instant potato flakes and of batch and continuous-explosion puffing.*

1990

**Theodore C. Byerly**

*For extraordinary contributions as a scientist, research leader, and administrator to the success of agricultural research programs and advances in U.S. and world agriculture.*

**Gordon Dickerson**

*For research contributions widely used by breeders to increase production efficiency of cattle, sheep, swine, and poultry.*

**Robert W. Holley**

*For isolation and characterization, including the first nucleotide sequence, of transfer ribonucleic acid (tRNA).*

**Virgil A. Johnson**

*For outstanding contributions to development of superior bread wheat cultivars and of improved wheat germplasm and for vigorous promotion of national and international cooperation among wheat breeders.*

**George F. Sprague**

*For outstanding contributions to effective methods of hybrid corn breeding and germplasm improvement.*

1991

**John H. Weinberger**

*For outstanding lifelong contributions in development of fruit varieties and fruit-breeding technology.*

**Walter H. Wischmeier**

*For developing the Universal Soil Loss Equation, which has been widely used for three decades worldwide in conservation and management of our natural resources.*

1992

**Raymond C. Bushland**

*For pioneering research leading to screwworm eradication by the sterile insect technique and for research leading to control of typhus vectors.*

**Lyman B. Crittenden**

*For significant contributions to retroviral genetics, transgenic animal development, and genome mapping in poultry.*

**Arnel R. Hallauer**

*For increasing understanding and use of quantitative genetics in plant breeding, which has led to development of many superior corn hybrids worldwide.*



1993

**John R. Gorham**

*For scientific leadership and studies that have resulted in solutions of disease control problems and have advanced the basic knowledge of viral and genetic diseases in humans and animals.*

**Sterling B. Hendricks**

*For significant contributions as a chemist, physicist, mathematician, plant physiologist, geologist, and mineralogist.*

**Clair E. Terrill**

*For scientific contributions and worldwide leadership in sheep production research.*

1994

**Charles N. Bollich**

*In recognition of superlative accomplishments in rice breeding and genetics and their consequent benefits to American agriculture.*

**Chester G. McWhorter**

*For outstanding contributions to American agriculture through basic and applied research that has resulted in improved weed-management technology, increased yields, and reduced cost of production.*

**Malcolm J. Thompson**

*For career research contributions in the field of insect and plant steroid biochemistry.*

1995

**Harry Alfred Borthwick**

*In recognition of contributions in elucidating the importance of photoperiodic mechanisms controlling flowering in plants.*

**William M. Doane**

*For initiating, leading, and conducting research that created new and useful products and led to the establishment of new industries based on agricultural raw materials.*

**Walter Mertz, M.D.**

*For contributions and leadership in elucidating the importance to health of several trace elements and promoting research on dietary risk factors for chronic disorders.*

1996

**Fred W. Blaisdell**

*For pioneering research and development of improved structures for soil and water conservation.*

**Herbert J. Dutton**

*For pioneering research leading to the establishment of soybean oil as the predominant edible vegetable oil in the world.*

**Charles Jackson Hearn**

*For developing improved orange, grapefruit, and tangerine varieties used extensively by U.S. citrus producers to replace trees killed by the 1980 freezes and to expand the citrus acreage.*

1997

**Morton Beroza**

*For major contributions to the development of environmentally compatible insect control strategies through discovery of lures, attractants, repellents, and pheromones.*

**R. James Cook**

*For extraordinary research on sustainable approaches to improve wheat health and for leadership in the transfer of information and technology resulting in solutions to agricultural problems.*

**William L. Ogren**

*For outstanding leadership and fundamental contributions to photosynthetic carbon metabolism leading to the discovery of new opportunities to improve the efficiency and productivity of crop plants.*

1998

**Thomas J. Henneberry**

*For conducting basic and applied individual and team research that has had sustained global impact on development and implementation of integrated pest management systems.*

**James H. Tumlinson III**

*For research that led to eradication of the boll weevil from the southeastern United States and the discovery of the chemical basis of plant-insect-parasite interaction.*

1999

**Allene R. Jeanes**

*For microbiological, chemical, and engineering research that created urgently needed, life-saving industrial polymers made from agricultural commodities.*



**Charles W. Stuber**

*For pioneering the use of molecular markers in identifying, mapping, and manipulating quantitative trait genes.*

**Richard L. Witter**

*For outstanding research contributions and leadership in the field of avian tumor viruses.*

**2000**

**Virginia H. Holsinger**

*For research leading to increased use of milk products  
and for humanitarian efforts in developing nutritious formulations  
for international food donation programs.*

**Marvin E. Jensen**

*For advancements in irrigation scheduling using computer  
models to estimate soil-water balance and for advancements in  
evapotranspiration theory.*

**Harley W. Moon**

*For contributions to a fundamental understanding of intestinal  
diseases in livestock and for development of effective control programs  
for these diseases.*

**2001**

**Lawrence A. Johnson**

*For pioneering research in developing the first useful technology for gender  
preselection of animal and human offspring and for outstanding contributions  
to semen preservation and artificial insemination in swine.*

**William E. Larson**

*In recognition of a pioneer who respected soil as a natural resource and  
devoted a research career toward improving its quality.*

**William L. Mengeling**

*For outstanding research contributions and leadership in the field of viral  
diseases of swine.*

**2002**

**George Inglett**

*In recognition of the development of novel, patented food  
ingredients including Oatrim and Nutrim, which have had a sustained  
beneficial effect on the American diet.*

**K. Darwin Murrell**

*For landmark research on parasites of veterinary and medical importance, especially trichinellosis of swine, and innovative development and leadership of laboratory and agency-level programs that established and advanced objectives of the Agricultural Research Service.*

**Stuart O. Nelson**

*For pioneering research on the dielectric properties of agricultural materials, applications of radio-frequency and microwave energy, and electrical measurements for moisture sensing in cereal grains.*

**2003**

**Edward B. Bagley**

*For outstanding research in rheology and food science that generated fundamental understanding of flow mechanics; and for pioneering concepts in super-absorbent materials that resulted in one of the most successful technology transfers in USDA history.*

**Janice M. Miller**

*For pioneering research in understanding, diagnosing, and controlling bovine leukemia, transmissible spongiform encephalopathies, and other chronic infectious or zoonotic diseases of ruminants.*

**2004**

**Donald K. Barnes**

*For remarkable contributions to alfalfa breeding and genetics, mentoring of plant breeding students, and service to ARS and the scientific community.*

**Ruth Rogan Benerito**

*For applying physical chemistry to solve problems that led to improved procedures and new uses for renewable resources such as cotton, wood, and paper.*

**Keith E. Gregory**

*For outstanding research contributions in genetics and breeding of beef cattle and for leadership of ARS research programs.*

**2005**

**Charles W. Beard**

*For outstanding contributions in poultry health research, in professional and organizational leadership, and in developing biocontainment concepts and systems for animal agriculture.*

**Nelson A. Cox**

*For lifetime contributions of distinctive research benefitting the poultry industry and public health through development and transfer of technologies that reduced foodborne pathogens, particularly Salmonella and Campylobacter.*

**Sigmund Schwimmer**

*For a distinguished career of scientific excellence in enzymology and its application to food science and human food products and quality.*

**Tien C. Tso**

*For outstanding research contributions and leadership in plant physiology and phytochemistry and their use to advance plant science.*

**2006**

**Wayne W. Hanna**

*For significant scientific contributions to U.S. food production and the national recreation industries and for related scientific achievements for research on apomixis and interspecific germplasm transfer.*

**Ray D. Jackson**

*For elucidating the basis of soil-plant-water-atmosphere relationships and developing innovative methods to assess and manage crop status through remote sensing.*

**Vernon G. Pursel**

*For lifetime contributions to genetic and reproductive development of livestock through pioneering research in genetic engineering and semen preservation.*

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